

Pasture Walks and Field Scouting

Monitoring of pastures and forage fields can help inform management decisions throughout the growing season. Decisions on modifications or treatments may impact your overall crop yields, livestock health and productivity, and overall profitability.

Pasture Walk

There is no one way to perform a pasture walk, nor definitive steps one needs to take to do it correctly. Review the list below and do those things that make most sense for you, your operation and what you are encountering this season. Here are some ideas that you may want to address.

Soil health on root profile

- ↳ Dig a small soil pit or dig out a slice of soil and look at root depth and volume. Lots of shallow roots and few deep roots may indicate challenges with plant vigour. Remember to contrast that with the species present (e.g. Kentucky bluegrass roots are typically shallow while alfalfa, orchard grass and brome grass should have deeper roots).

Soil moisture (see Soil Moisture Hand-Feel Method at the end of the article)

- ↳ For dryland crops, is there enough soil moisture in the root zone to support growth and is there rain on the horizon?
- ↳ For irrigated or sub-irrigated crops, are there any water shortages or reductions ahead? There are numerous tools to assist you with irrigation scheduling and if they are available for your area use them to your advantage. Examples of tools include: soil moisture probes, online apps such as [FarmWest.com](https://www.farmwest.com), [BC Agriculture Water Calculator](#), [BC Irrigation Water Use Calculator](#), linkages to weather stations and lower technology such as rain gauges and using the Hand-Feel Method (outlined below) to estimate soil moisture content.

Stand vigour, look at:

- ↳ Plant species present: are the species present the ones you want or are managing for? Do they make up most of your stand?
- ↳ Stand Density: plants per square foot (less than 3 plants per square foot may indicate a need to renovate).
- ↳ Colour or appearance of plants: are the plants near manure deposits greener and growing better? If this is the case, the pale green areas may be indicating fertility concerns.
- ↳ Plant Growth or Regrowth: is this uniform? Consider field differences like gravel or sandy soil areas, slope, etc.
- ↳ Erosion: is there evidence of erosion? Is this erosion increasing or healing? Items to look for include soil compaction, soil movement or loss, and/or pedestalled plants.

Stand or pasture productivity

- ↳ Is the stand or pasture providing the volume it should or that you need?
- ↳ If the stand has been harvested (e.g. for stored feed), is it regrowing as needed? What might be limiting that regrowth?
- ↳ Is repeated, return or “second bite” grazing occurring in any areas?

Forage Field Scouting

Is the stand density and/or composition what you are hoping for? (It is recommended for alfalfa stands that there is a minimum of 3 to 5 plants per square foot.)

Is there unexpected variability in the stand?

What is the presence of undesirable plants or weeds? Any noticeable disease pressures on leaves, roots/crown or stems?

Are there insects or burrowing pests or damage present?

Are there nutrient deficiency symptoms evident, such as colour variation or stunting? For example, alfalfa boron deficiency can show as yellow/red leaf margins, phosphorus deficiency as smaller darker coloured leaves.

Is the crop growth stage “on schedule” for anticipated harvest type and timing?

Is the soil moisture and/or irrigation meeting crop demands?

Forecasting/Looking Ahead

Plant Health

- Based upon amount of forage harvested, level of forage removed or remaining standing, is this season’s production typical, lower or higher?
- Based upon soil moisture, weather forecasts and plant regrowth, are your fields likely to produce as expected, higher or lower?
- If you have identified issues with your stands: now may be the time to consider renovation plans, and depending on location there may be fall seeding options.

Livestock Management

- Are livestock watering sources drying up? Are they near or able to support the areas where forage is available?
- Does that mean you will need to look for more pasture to graze, reduce livestock numbers, partition livestock to better place growing animals on less abundant quality forage e.g. wean early and move cows to more mature forage.
- How is your winter feed shaping up? Going to looking for more and/or filling nutritional gaps?
- Do you need to reduce the demands on your pastures? Early weaning can be an effective method to reduce the feed volume and nutritional demands of your cows and subsequently reduce the pressures on your pastures. It can also allow your cows to gain condition before the winter-feeding period and significantly reduce your winter-feeding costs. A follow up article will discuss the options and economics of early weaning.

How wet or “full” is my soil? - Hand-Feel Method

To measure soil moisture using the hand-feel method, obtain a handful of soil and squeeze tightly. If it forms a ball, bounce it three times lightly in your palm. The relative soil moisture can be determined for the different soils by using Table 7.1.

Table 7.1 Soil Moisture, Appearance, and Description Chart

Available Water ¹	Feel or Appearance of Soil			
	Sand	Sandy Loam	Loam/Silt Loam	Clay Loam/Clay
> 100%	Free water appears when soil is bounced in hand.	Free water is released with kneading.	Free water can be squeezed out.	Puddles; free water forms on surface.
100%	Upon squeezing, no free water appears on soil, but wet outline of ball is left on hand. (1.0) ²	Appears very dark. Upon squeezing, no free water appears on soil, but wet outline of ball is left on hand. Makes short ribbon. (1.5) ²	Appears very dark. Upon squeezing, free water appears on soil, but wet outline of ball is left on hand. Will ribbon about 1 inch. (2.0) ²	Appears very dark. Upon squeezing, free water appears on soil, but wet outline of ball is left on hand. Will ribbon about 1 inch. (2.0) ²
75 - 100%	Tends to stick together slightly, sometimes forms a weak ball with pressure. (0.8 to 1.0) ²	Quite dark. Forms weak ball, breaks easily. Will not slick. (1.2 to 1.5) ²	Dark coloured. Forms a ball, is very pliable, slicks readily if high in clay. (1.5 to 2.0) ²	Dark coloured. Easily ribbons out between fingers, has slick feeling. (1.9 to 2.5) ²
50 - 75%	Appears to be dry, will not form a ball with pressure. (0.5 to 0.8) ²	Fairly dark. Tends to form a ball with pressure but seldom holds together. (0.8 to 1.2) ²	Fairly dark. Forms a ball, somewhat plastic, will sometimes slick slightly with pressure. (1.0 to 1.5) ²	Fairly dark. Forms a ball, ribbons out between thumb and forefinger. (1.2 to 1.9) ²
25 - 50%	Appears to be dry, will not form a ball with pressure. (0.2 to 0.5) ²	Light coloured. Appears to be dry, will not form a ball. (0.4 to 0.8) ²	Lightly coloured. Somewhat crumbly, but holds together with pressure. (0.5 to 1.0) ²	Slightly dark. Somewhat pliable, will ball under pressure. (0.6 to 1.2) ²
0 - 25%	Dry, loose, single-grained, flows through fingers. (0 to 0.2) ²	Very slightly coloured. Dry loose, flows through fingers. (0 to 0.4) ²	Slightly coloured. Powdery, dry sometimes slightly crusted, but easily broken down into powdery condition. (0 to 0.5) ²	Slightly dark. Slightly coloured. Hard, baked, cracked, sometimes has loose crumbs on surface. (0 to 0.6) ²

¹ Available water is the difference between field capacity and permanent wilting point

² Numbers in parentheses are available water contents expressed as inches of water per foot of soil depth.

Additional Notes

The growth and production of forages decreases as the Available Water (AW) in the root zone decreases to what is known as the Permanent Wilting Point (where the plants cannot pull the remaining soil water into their roots, and plant survival is threatened). This happens in the 0-25% AW category, with the precise level varying with soil type and plant species.

- ↳ AW less than 25%: All forages will go dormant, perennials may recover with adequate moisture (and photoperiod and heat units), whereas annuals will not recover.
- ↳ AW 25-50%: Plants will show increasing signs of drought stress and reduced yields as AW declines.
- ↳ AW 50-75%: Plants will experience normal growth and average production (with adequate fertility).
- ↳ AW 75-100%: Plants will experience optimal growth and production (provided the fertility will support such growth).

Knowing your soil moisture status and weather forecast can help you determine a reasonable estimate of what to expect next for your forage stands. It is also the basis of irrigation scheduling for producers with irrigation.

Please refer to the [BC Drought in Agriculture](#) website for more information, resources and tools on drought for forage crops and irrigation management, livestock management and other topics, as well as financial assistance for agricultural producers impacted by fire and drought.

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One-on-one support access

If you have questions and would like to follow-up with one of the authors for an individual appointment, please contact via one of the following to book a virtual appointment. When calling, please indicate whether you would like to talk about animal nutrition, forage management or economics/business decisions so that the administrator can best direct your request.

- ☎ Phone: 250-573-3611
Toll-free: 1-877-688-2333
- ✉ Email: drought@cattlemen.bc.ca

(Please note: these contact options will connect you with the BC Cattlemen's Association; however, appointment options are available to all livestock producers across BC and are not limited to cattle.)

Have any additional questions? Contact AgriService BC

- ☎ 1-888-221-7141
- ✉ AgriServiceBC@gov.bc.ca
- 🌐 www.gov.bc.ca/agriservice